FADCA>BEACON

THE FLORIDA AMATEUR DIGITAL COMMUNICATIONS ASSOCIATION NEWSLETTER

Vol. 1, Nos. 11/12 Brandon, Florida November/December, 1984

DIGITAL EVENTS

JANUARY 12/13. SARASOTA Hamfest featuring FADCA packet seminar and demonstration. Contact W1BEL to participate.

FEBRUARY 2/3. MIAMI Hamboree and Packet Seminar. Dade Radio Club/FADCA Conference on Applications of packet radio, 10 AM Sunday. Contact KI4T or WD4JKM.

FEBRUARY 23. Ft. MEYERS Hamfest with FADCA booth and lecture. Contact KB4CIA or W1BEL.

MARCH 2. HERNANDO County Hamfest. FADCA participation being arranged.

MARCH 8/9/10. ORLANDO Hamcation. FADCA presentation. Contact K4AHO.

MEMBERSHIP DUES

FADCA membership dues for 1985 are due as of January First. The basic dues are $12.00, but because of the 1984 dues incentives, each individuals 1985 dues may vary. See your address label. If 1985 appears, your dues are paid up. If 1984 appears, your dues appear in parenthesis following the year. Please be sure to bring any mistakes to our attention. Please pay by check, payable to FADCA

The F.C.C. has given a Rule Number to a petition of the A.R.R.L.requesting an amendment to the Rules which will "permit automatic control of digital communications on all amateur frequencies above 30 MHz, provided that certain safeguards are incorporated in the amateur station as control functions."

The deadline for Comments is January 9, 1985. Amateurs interested in supporting this Rules change will please note that the current Rules do not address the operation of digital repeaters in automatic mode.

If you wish to support the petition, I urge you to submit formal Comments to the Secretary of the F.C.C. In order to be effective, your commentary should be logically constructed and without emotional or political overtones.

Send five (5) copies plus the Original to;

Hon. William J. Tricarico, Secretary
Federal Communications Commission
Washington, DC 20554

and plainly mark the outside of your envelope "COMMENTS - RM 4879."

Those wishing the Commissioners to have individual copies must send five more copies (there are five Commissioners!) for a total of eleven. The F.C.C.'s Rule Making process requires the Commissioners to accept public comment PROVIDED that the FORMAT is CORRECT. This format is as follows; →

FADCA sponsors the SOUTHNET packet network.

WIDE-AREA DIGIPEATERS

JACKSONVILLE:	WB4RCY-1
GAINESVILLE:	W4DFU
OCALA:	K4OZS
ORLANDO:	N4JWX-1
MELBOURNE:	N2WX-7
TAMPA:	W1BEL, W9DVM
STUART:	K4NTA-1
OKEECHOBEE:	WA4IYY-1
W. PALM BEACH:	WA4ARE-1
FT. LAUDERDALE:	WA1JOU
MIAMI:	W4NVU

FADCA VOICE NETS

REGIONAL (FLORIDA AND ADJOINING STATES): 3958 KHz Sunday at 0800 EST. NCS: K4NTA

SOUTHNET SOFTCOM (NETWORKING SOFTWARE COMMITTEE): 3958 KHz, Friday at 2100 EST. NCS: N2WX

BRANDON (TAMPA BAY AREA): 147.165 (+600) Sunday at 1930 EST. NCS: KF4EF

BREVARD COUNTY AREA: 147.060 (+600) Sunday at 2000 EST. NCS: N2WX

BROWARD COUNTY AREA: 145.270 (-600) Sunday at 2000 EST. NCS: K4GFG

ORLANDO AREA: 147.285 (+600) Sunday at 2100 EST. NCS: K4AHO

SOUTHNET statewide frequencies:
Primary LAN:145.010
Local file xfers QSY to 145.030 /050 /070 /090
220 LAN (20 KHz bandwidth): 221.4
Medium Speed Linking (100 KHz b/w):220.570

SOUTHNET ELECTRONIC MAIL SERVICES

BULLETIN BOARD SYSTEMS

STUART (EAST CENTRAL FLORIDA): K4NTA
WEST PALM BEACH: WD4LHF
MIAMI: NK4K

NON-REAL TIME GATEWAYS

COMPUSERVE HAMNET: W4PCM, N5AUV, K4GFG
DIGITAL RADIO NET: K4NTA, N2WX, W1BEL
HF and OSCAR-10: Real soon now...

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Before the
Federal Communications Comission
Washington, Dc 20554

IN THE MATTER OF PETITION FOR RULE MAKING; RM 4879

These are the Comments of; (your name, occupation, address, and callsign if you wish)

[FOLLOWED BY YOUR COMMENTS IN YOUR OWN WORDS, HOPEFULLY BRIEF AND LOGICAL]

Signature and Date.

Please have your Comments to the F.C.C. in the mail at least one week before the deadline of January 9, 1985.

NEWS AND VIEWS
Gwyn Reedy, W1BEL

Happy New Year! First this column was supposed to read Happy Thanksgiving, then I changed it to Merry Christmas, and now my fingers are crossed that the BEACON will get into the mail before 1985. Why the delay? Yours truly, the editor and publisher, has not been able to keep up with it all. Work, family, many hamfest presentations, and a little time trying to get ready for 220 MHz linking all make it difficult to get the newsletter out. Lack of adequate computer resources compounds the problem. What am I going to do about it, you ask. I am going to try again to delegate responsibility for portions of the FADCA administration and newsletter composition. There are a number of faithful monthly contributors, including K4NTA, N2WX, K4GFG, and N4ZQ. There have been many other contributors, but I single out those because they fully take the responsibility of preparing their inputs each month, on time, and getting them to me. Many others have done a fine job of helping with one or more 'stand-alone' articles, especially K4RHD, W4APV, K4AHO. The list is not complete, nor is it intended to be. I just want to say that the BEACON is not 'my' newsletter, it is the FADCA newsletter, and you are FADCA, my friends. I am looking for volunteers to perform the following tasks:

1. Be a columnist reporting activities in your area. To do this you must be active in local activities and inquire about what is going on.

2. Be responsible for reviewing other packet information sources such as newsletters, on-line information services, etc. and extracting information useful to us here. Perhaps that could be organized on an overlapping topical basis such as HF, Satellite, BBS, Traffic, Emergency communications, Linking, Software, Terminals and communication software, etc. If you are interested in some sub-specialty of packet (and it touches nearly everything, doesn't it) please volunteer to be a reporter on that area for the BEACON.

3. Publishing the newsletter--taking the edited files that compose a newsletter, getting hardcopy, laying them out, printing, and mailing. A good packet station and/or telephone modem and letter-quality printer would be needed.

4. Assisting KF4EF with membership services such as keeping track of dues, addresses, members equipment lists, etc. This volunteer should have considerable computer resources.

5. Writing a monthly column on packet basics. Hardware, operating procedures, etc.

This is not a complete list. Many talents can be used, but the primary characteristic needed is the willingness to work and accept responsibility for a project. The "call me if you need a hand" offers are SINCERELY appreciated, but the overhead of organizing one time work parties is probably more than the work accomplished. Please step forward and take part. If there are not adequate offers of assistance, the newsletter will have to go on a bimonthly or unscheduled basis.

LINKING NEWS

Now for the good news. At least four packet stations in the TAMPA BAY LAN are on 221.4 MHz packet. K4OQ in Clearwater, K4RHD in Seminole, KK4S in Sarasota, and W1BEL in Brandon. K4RHD is beaconing regularly to evaluate propagation, using about 250 watts to an omni antenna at 80 feet. Bill is busily building a stacked Yagi array for beaming at Melbourne. Ray, KK4S, has an interconnect between 221.4 and 145.01, however has to limit his 220 transmitting due to TVI. W1BEL has a 250 watt capability and is preparing a tower to hold a 220 "Boomer" for the assault on Melbourne. W4APV (a long time 220 supporter) has been behind much of the happenings and was responsible for K3AAX in Melbourne acquiring a surplus 220 rig that will soon be the eastern end of the 'test link.'

DIGIPEATER NEWS

The long awaited Tampa digipeater is going up in Clearwater! KC2FF and N4HWW, with assistance from K4OQ and others, are putting up a GLB board and a GE-Mastr on top of a tall building and excellent coverage is anticipated. The callsign to look for is KC2FF-7, so chosen in anticipation of N2WX-7 style software on a Xerox 820 board later in the Spring. Congratulations, guys. No more word on the Lake Wales digipeater. That project seems firmly bogged down at the moment. The Orlando LAN has a 150' downtown site that will serve the metro area nicely and be an ideal link node input point. I believe it will be N4JWX-1. Gainsville will sport a 400' site in the spring under the callsign KF4TT-1. And finally, WB4RCY-1 in Jacksonville, is at its 3rd or 4th site and seems to be working well. Bob, WB4BIW, put an 80 watt amplifier and a preamp on the digipeater on December 29th and South Georgia has been booming in ever since.

THE GEORGIA CONNECTION

There are 8 packet stations is Southern Georgia: KF4JF, KB4JF, KA4DPF, WD4LYV, WD4MNT, WB4ZNW, K8UTY, and K4XA. Oftentimes KA4DPF beams at Jacksonville and WD4LYV beams at Atlanta. Jacksonville stations work the above stations frequently, and often hear beacons from Atlanta stations through WB4GQX-1, the Atlanta digipeater. Several Atlanta to mid-Florida connections have been reported. South GA to FL contacts are now becoming commonplace. (It is interesting to note that on Dec 27th, last year, we had just made the first connection across the state of Florida.) FADCA is working closely with GRAPES and SAPS to set up a linking scheme.

SUMMARY

This has been an amazing year in packet radio in Florida and the Southeast. Many new people have come into our ranks with their great enthusiasm and need for knowledge. Let us all recognize this mode of commnuication as the revolution that it is and make the commitment to press on rapidly, yet with good judgement, and keep our region in the forefront of packet development. Let me hear from you with concrete proposals for your support and participation.

The IEEE COMMUNICATIONS Magazine for November is dedicated to the theme, Progress in Computer Communications. Here is a list of the feature articles: 1. Controlling Routes, Traffic Rates, and Buffer Allocation in Packet Networks. 2. Packet Radio and Satellite Networks. 3. Packet Radio Network Routing Algorithms: A Survey. 4. An Experimental Study of the Performance of a Local Area Network. 5. TDMA in a Random-Access Environment: An Overview. These are very interesting and useful articles. Will someone volunteer to read them and abstract the essential information for a BEACON article?

Also from the IEEE, the June 1984 Transactions on Commnunications contains a large number scholarly of papers dedicated to computer communication. A sampling of titles: 1. An Adaptive Receiver with Memory for Slowly Fading Channels. 2. An Improved Broadcast Retransmission Protocol. 3. An Acknowledgement-Based Access Scheme in a Two-Node Packet-Radio Network.

"WHERE TO FIND IT" SECTION

BG Micro, P.O. Box 280298, Dallas, TX 75228 has crystals for the TAPR TNC board for $1.49.

LOLIR LECTRONICS, 3610 N. Echo, Plano, TX 75023 (214) 234-8032, has 20 pin double row headers that fit TAPR TNC modem disconnect sockets for $.75 each.
(Both the above outfits have a standard shipping fee which encourages group buys or larger orders.)

Dave Pederson, N7BHC, 4382 Cherryview Dr, West Valley City, UT, 84120 has a quantity of 8 pole, 2 throw switches that would be good for RS-232 switching of terminals and printers.

Randy Jarrett, WA4MEI, 3154 Andrea Lane, Rex, GA 30273, has HM-6264-15 8k static rams @ $20 each. He also has 6809, 6821, 64k EPROMS, etc. Mrs. Jarrett is an electronic assembler technician by trade and will assemble TNC kits for a reasonable fee.

BYTES FROM THE WRITE ONLY MEMORY
Ted Huf, K4NTA

NEWS FROM THE MIDDLE EAST COAST

We are glad to welcome some new stations to packet radio this month. WA5RCX, Red, is in Ft. Pierce. He is using a TAPR Kit and TRS-80 Model-3. Red is an ATV Engineer in Vero Beach.

WD4KAV, Joe, is in Stuart using a TAPR TNC and Vic 20. Joe is working on a BBS/Mailbox system with his Vic and disk drive.

KA4LIF is Thom in Stuart. He is using a TAPR Kit and C64. Thom works at the Martin County EOC and will be control operator for the TNC that will be installed there. The EOC station will be KA4LIF-1.

W4UZJ is Lloyd in Riveria Beach. Lloyd has a TAPR Kit TNC. His computer is an S-100 or Apple.

KA4EPS, Lu, lives in Lake Worth. Lu bought his TAPR kit at the Broward Hamfest on December 1st. He got home about 8PM and had the TNC on the air by midnight. I am sure Lu set some sort of record for contruction. Lu has a telephone BBS that he is planning to use for both packet and telephone with connections to the TNC by licensed ham users of his BBS. His will allow hams to telephone Lu's BBS and make packet connections on his TNC. Way to go Lu!

Welcome back to Henry, WA4HXZ, in West Palm Beach. Henry's TNC has been on temporary duty at the Palm Beach EOC, but he has it back now and is on the air.

Another new station is KA4NOF, Phil, in West Palm Beach. Phil has a TAPR Kit and Televideo terminal. He works at Motorola in Ft. Lauderdale

BEACONS AND CW IDs

I don't want to sound like I am harping on this, but we have a lot of new stations on the air so I will say it again. CW IDs really jam up the network. Your CW ID will come on every 10 minutes and when you disconnect. All this code practice causes other TNC to either hold off and not transmit or causes a retry. The ARRL and FCC Rules say that CW is not required to ID your station, but that it can be done in the digital mode that you are operating. Here is what I do, send a beacon every 10 minutes (BEACON EVERY 60) with a BTEXT saying "de K4NTA Stuart" or something like that [Use /R if you are digipeating. Ed]. This meets the FCC requirement and does not clutter up the network. Beacons are not as bad as the CW ID but do cause some clutter. Unless you are sending a beacon for something like a CQ, how about keeping the beacons down to about every 10 minutes as well. A every 10 minute beacon saying that your mailbox is open will let people that you are around and take care of the ID at the same time. Also try to keep the beacons short and just a couple of lines so they will not cause a complete screen scroll off for the guys that are monitoring.

PERSONAL NOTES

I am working on my 820 Xerox single board computer here in my "spare time". I have the power all ready and found a nice cabinet at the Broward Hamfest for $12. At work I found an old keyboard that was used for a TV charater generator. I saved it just as it was headed to the dumpster. It does not work but I am planning on removing all the discrete IC's and using a 2373 keyboard encoder. I will for the time being use a couple of 5-1/4" drives. Another project here is getting one of these Xerox wonders running as a digipeater using the N2WX firmware. With one of these 820 boards in use as a digipeater with the 8530 FAD board that N2WX designed, attached it, I will be all set for linking when the firmware is completed. I understand that these 820 computers at still available from Xerox (214-960-3367). Used and unchecked at around $50 and brand new ones at $125. These computers have a Z-80 running at 2.5 megs, 64K of DRAM, 2-PIO chips, SIO and disk controller. All you need to get it running is a keyboard, power supply, video monitor and disk drive (8" or 5-1/4"). It runs CP/M 2.2. To turn one into a digipeater, all you need it the power supply and the FAD board. TAPR has the bare FAD board for those people using the 820 for linking experiments. It is not difficult to wirewrap the FAD.

My Xerox 820 System
by Bill Sams, KF4LG

Last February I started collecting the necessary salvage parts and pieces to build a homebrew version of the Xerox 820 computer using the boards released through the Xerox Manufacturing Outlet. I obtained the cpu board, a power supply of the proper voltages from B.G. Micro, two 8" disk drives and a 12" monitor from a local Tampa surplus house, a disk drive power supply from Fair Radio Sales, a case from Meshna and a keyboard also from Meshna.

Armed with the above material, I started the physical construction of my super system. Five or six months later, after Gwyn got back from his boat trip, I finally got all my cable wiring errors, etc. (bugs) out of the system and saw my first sign on message. What a thrill -- I had begun to believe I would never arrive at this point. After a long search for the coding of my Italian keyboard, numerous wiring errors in my cables, problems with the monitor - composite vs separate signals, a bad (new) transistor in the dynamic RAM protection circuit that "Microcornucopia" said I just had to have, success was mine.

It did not last long (usual for me). The power supply died. The keyboard would not return an "R" when you struck "R", it gave you an "f" as did several other keys. The main board did not think any disk drives were connected.

However after many sessions of sweat, blood and tears, and with Gwyn's expertise, we eliminated the problems one by one. I got another power supply, bought a new keyboard and case from Jameco and everything seemed perfect. Everything worked and the system has a very satisfactory "finished" appearance. Gwyn even used it to put out one issue of the "FADCA BEACON".

Now it is on the injured list again. I see all these "BDOS errors" and "disk error 10 U00 T00 S00" printed on my screen now. I haven't figured out the current source of my frustration yet, but with help I will.

I like this system very much. After spending most of my time with TRS-80 and C-64 micros, this Xerox machine (when it's right) is a pleasing system with a tremendous amount of software available. The 80 columns on packet are a big improvement too.

I think the best part of this whole experience is the knowledge I have gained. I still am a rank beginner, but when I think back to all the things I had to dig into in making these non-matched pieces play together,I realize that I really have gained knowledge - and that is particularly satisfying. Many thanks to Gwyn for his help, patience and support through my ups and downs on this project. It has been worthwhile and I now have a nice home computer system with very little invested.

SIMPLE TNC INTERFACE FOR ICOM IC-2A, IC-02A HT

Tom, K4GFG, is using an ICOM IC-2AT with his TAPR kit TNC using the following hookup. The interface has also proven to work properly with the IC-02AT. Connect a 4.7k ohm resistor from the PTT terminal of the TNC to the MIC line. Run the MIC line into the MIC connector on the radio. No transformer, no problems. The resistor can be mounted in the cover housing the DA-9 connector at the TNC end of the radio cable.

A GRAPE FROM THE GRAPEVINE:
CONNECT N4CI (ERIC) IN CONYERS, GA.

Sure would like to compliment Gwyn and the others on the BEACON and your organization which, as my son Chris (KA4VOX) puts it, "is moving light years ahead of us." Indeed, who would have imagined a leading edge segment of our hobby could move so fast?

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The GRAPES (Georgia Radio Amateur Packet Enthusiast Society) was formed officially on Oct 27, 1984 as a strictly packet radio special interest group (SIG). Although a constitution was not formalized, officers were elected by the majority of the members of the group present and a temporary operating structure agreed upon. Besides the conventional officers, we have an RF chairman to handle the radio portions of the system, a TNC chairman who will work on the interests of the TNC from the RS-232 connector to the radio connector, and a User Port chairman to handle anything intelligent or dumb hanging on the terminal side of the TNC. For 1985 these are respectively: Fred, N4CLA, Doug, KD4NC, and Dan, KI4MQ. Dan is also our newsletter chairman.

The actual subject of this article is "Now that we got it what can we do with it?" It has been my observation, and it is my opinion that the layman user of packet radio will determine its ultimate success. As the creative geniuses who have given us a strong foothold at the link level move on to higher levels of creativity, they may find that the hobby is drying up behind them. Having given demonstrations, fielded questions, and watched online conversations here and there, it becomes readily apparent that the layman has this bewildered stare. The first uses for packet seem to be to type back and forth like RTTY. For most, myself included, this gets old quickly. We are a small interest group inside of a relatively small hobby group. Packet radio benefits by an increasing volume of stations to make the network function properly on a distributed network basis. I question if we have the numbers required for efficient nationwide networking. Within the hobby we are already requesting large chunks of spectrum for high speed links in bands we are having trouble holding since we don't have the numbers to influence reglatory decisions. Perhaps we should reevaluate the codeless digital ham license. If we can keep the integrity in the process, we could benefit from the much larger group of couputer hobbiests. Notice I said hobbiests, not personal computerists. We have some crackerjack programmers and theoreticians in the GRAPES who are making contributions but who cannot legally sit alone at a terminal to test some of the suggestions they have made. I am not suggesting that we open the floodgates; one of my most cherished earnings is my Ham ticket and my ability to copy code better than a machine. Some amongst us must ponder the user end and the number of potential users. I am the defacto president of a 200 member loosely formed C-64 users group and I can count any number of members who could (even with this low end machine) pump some meaning into the RS-232 connector. This is in spite of the fact that they don't know what happens to it after it disappears into the TNC. Some sort of quality handshake is needed between these two hobbies.

With that as the major thrust of this article, I would like to ramble into some mind joggers to maybe pull that super hobbiest programmer, or hardware junkie who is thinking of carving out a recognition nitch for himself in the clouds of level 3 or 4 or whatever, back on the terminal side of the TNC. When I see a TAPR TNC with the CONOK OFF I say "what a waste." For under a hundred dollars that digipeater could have a real-time clock attached to it. Whaddya want to write in folks? The C-64 has Pascal, Fortran, Promal, COBOL, CPM, 3 or 4 versions of BASIC, C, assemblers, etc. As they argue the 8 vs 16 bit at level 3, how about a simple, generalized board using a 65C02 or Z-80 designed to plug into the RS-232 interface which has serial, parallel, A/D, D/A, wire wrap area, Bell 103 modem, 2 ZIF sockets (one an EPROM burner). Take 32K and write a simple monitor, and the I/O kernal, and let me talk to it with a C-64, Apple, TRS-80, etc. How about one of those digipeaters interfaced to a station monitor which will, when connected to, tell you your deviation, frequency, etc. A digital weather station? (Neat one for the hurricane watchers.) There are lotsa regular non-commercial bulletin board systems around which one could autodial. BBSs accessable by phone or packet. Reverse packet patch with password system so telephone modem folks can get on packet. You digital guys, what hangs on a 488 bus that might also hang on a TNC?

Last thought, special interest groups within our SIG. We probably need wide area coordinators for user end smart connections. C-64, Apple, IBM, etc. I will volunteer to (as time permits) coordinate C-64 software/hardware/applications to packet radio. Just a clearinghouse function.

My first contribution is a Superbase-64 database program set, to generate membership files from a standardized application form, including ROLODEX 3x5s, membership horizontal listing, ZIP sorted mailing labels, station attributes (TNC, terminal, etc), packet transportable data files, packet transportable membership files.

Packet compatible C-64 products; products of choice from personal review: VIP TERMINAL, takes a while to load but worth the wait. A VT-52 emulator which is self-documented. Instant on-screen help menu, remarkably accurate togglable on-screen clock, with alarms. File transfers either direction. Supports Punter handshake protocol. Autodial. Remote toggle E-mail which leaves unattended E-mail on disk as a time named file. Complete communications interface control, printer manipulation, X-on/X-off configurable and supports RTS/CTS hardware handshaking. Remarkably readable software generated 40, 64, 80, and 206 column screens. (64 is the limit on TV or color monitor.) Drawbacks: only an 8k online buffer. RS-232 interrupts interfere with echo to the screen at rates above 600 baud (files going to the port are OK). Having evaluated almost all of the C-64 terminal software, I feel this is brilliant.

Hope to C U next month. Hey Keith, N4ZQ...

FOR SALE

Modems for 200 Hz shift (for use only with packet gear). See article in October BEACON. Requires construction of interface to work with TAPR TNCs. Suggested interface information included with the modem card. $25 plus $1 S&H from FADCA, address on back cover.

ASCII terminals. FADCA has an arrangement with a surplus terminal supplier for BEEHIVE model B152 dumb terminals. These units are 20" wide, 16" high, and 16" deep, not counting the detachable keyboard. There are 2 RS-232 serial ports, one is software programmable from 75-19.2 kb. These terminals are in working condition, with manual. As delivered the terminals generate only upper case ASCII characters, but there are some owners that are working on a fix for that problem. Excellent for getting started in packet, or for that 'second station.' $75, including shipping charges to your location. A few terminals will be kept on hand for sale to new packet people at hamfests. Write to FADCA, Address on back page.

FREE SOFTWARE

Split-screen machine language terminal program for the Commodore-64. Send a good disk and postage paid return mailer to: Bob Grant, WD4BIW, 1665 Louvre Dr. Jacksonville, FL 32221.

IS YOUR CW ID ON?
From the NEPRA PacketEar

Have you ever suffered the ol' *RETRY COUNT EXCEEDED* problem when you had a good path to the other station? This is usually caused by other traffic on the channel. Congestion on the frequency usually results in longer-distance QSOs using digipeaters (or multiple digipeaters) frequently getting trashed and disconnected. Even worse, usually only one of the stations is aware that the QSO has terminated for retries. The other station sits there in blissful ignorance waiting for a line to be typed out on his screen.

All this happened to me last night about 10 times, and believe me, it is AGGRAVATING! Packet radio can timeshare a frequency for multiple QSOs, but we have to optimize all the parameters. We have previously talked about optimizing AXDelay, DWait and other parameters on the TAPR boards. Listening on frequency last night, it was obvious that a major problem is the many, many CW IDs. I got disconnected several times because 2 or 3 TNCs identified almost back-to-back.

Sending only your call letters at 20 words per minute is both inefficient and also no longer a legal requirement. Think about it, why do we ID in CW? We did it originally to identify to non-packet stations who we were. That way, potential problems of interference could be identified easily and rectified before damage was done. I don't think this is any longer a necessity. 145.010 MHz is an established packet radio frequency all up and down the East Coast. The only ones who care about your call letters are fellow packeteers, and they won't be listening to CW anyway.

My CWID is OFF. Is yours? [Too frequent beacons are also a problem. -editor]

FADCA SQUELCH TALES
BY N4ZQ

AS REPORTED LAST MONTH, GROWTH OF PACKET RADIO IN FLORIDA CONTINUES AT AN UNBELIEVABLE RATE. AN EVENING AT THE KEYBOARD DOES NOT GO BY WITH OUT SEEING A NEW CALL SIGN SCROLL BY. RECENTLY VIEWED AT THIS LOCATION WERE, N4IPX - STUART, N4AIY - STEVE, WB4EXN - TONY, WA5RCX - RED, AND WB4EHG TO NAME A FEW. WELCOME ABOARD TO ALL. STILL LOOKING FOR A BEACON FROM WB4ZXS, WB3LGB, KB4LLO, WD4ASW AND MANY OTHERS THAT ARE KNOWN TO BE BUILDING AND OR INTERFACING. IT APPEARS THAT PACKET RACKET IS ALMOST SELF POPULATING!!!

THE FOLKS IN JACKSONVILLE REPORT THAT ON A NUMBER OF OCCASIONS A CONNECTION TO GEORGIA HAS TAKEN PLACE. THIS BEING THE FIRST KNOWN PACKET QSO'S WITH OUR SOUTHNET NEIGHBORS. ON ONE BAND OPENING (11/16) I SAW A MULTIPLE BEACON FROM WD4LYV IN SYCAMORE GA. COULD THIS BE THE FUTURE ROUTE TO ALANTA???

PACKET FORUMS AND HAMFESTS ARE IN FULL SWING HERE IN THE SUNSHINE STATE. CLEARWATER WAS DURING THE THANKSGIVING WEEKEND, WITH THE FT. LAUDERDALE THE FOLLOWING WEEKEND. BOTH WERE VERY SUCCESSFUL, WITH THE ADDITION OF A NUMBER OF NEW PACKET PEOPLE TO LOOK FOR. MIAMI HAMFEST IS IN EARLY '85 WITH A BIG PACKET SYMPOSIUM PLANNED...

K4AHO, JIM IN ORLANDO, REPORTS THAT N4JWX IS ACTING AS AREA DIGIPEATER. JIM IS BUSY WORKING WITH A GLB BOARD, SOON TO BE THE LAN (LOCAL AREA NETWORK) DIGI. WE'RE TOLD THAT VERSION 3.2 SOFTWARE IS NOW AVAILABLE FOR THE GLB, AT A COST OF $17.00. ORLANDO GANG IS LOOKING INTO 3 POSSIBLE SITES FOR THEIR AREA DIGIPEATER. WE UNDERSTAND ONE TO BE A 1000 FOOTER... HOWIE, N2WX, SAYS THE NEW XR MODEM ON -7 HAS GIVEN NEW LIFE TO THE MELBOURNE DIGIPEATER. THAT COUPLED WITH THE 100 WATT KICKER, MAKE -7 EASILY WORKED FROM HERE ON THE WEST CENTRAL COAST. WORD FROM JOEL, KI4T, IS THAT THE MIAMI DIGI WON'T BE POSSIBLE UNTIL SOMETIME IN THE FIRST QUARTER OF 85. SUGGEST YOU USE W4NVU AS A MIAMI PEATER, AS IT'S UP 340 FEET AND BEING HEARD IN FT. LAUDERDALE... AND TO FINISH UP THE DIGI REPORTS, HAS ANYONE HAD ANY LUCK GETTING INTO OKEECHOBEE? SEEMS THE ONLY ROUTE TO IT IS VIA K4NTA-1 IN STUART...

NET ACTIVITY IS RUNNING A HIGH CHECK-IN COUNT. THE STATEWIDE SUNDAY MORNING NET PICKING UP A LOT OF NEW COMERS THAT WANT TO KNOW MORE ABOUT PACKET AND FADCA. CHECK ELSEWHERE IN THIS ISSUE FOR THE TIME AND FREQUENCY OF ALL THE FADCA SPONSORED NETS. LISTENING ON 21.280 AT 19:00 UTC LAST SUNDAY, I HEARD A NUMBER OF WEST COAST STATIONS TALKING ABOUT PACKET RADIO. AS I UNDERSTAND IT, TAPR AT ONE TIME RAN A COUNTRY WIDE NET AT THAT TIME. HOWEVER IT HAS BEEN SOME TIME SINCE ANYONE IN FLORIDA HAD HEARD FROM IT. WHAT I HEARD DID NOT SOUND LIKE A FORMAL NET, BUT A GROUP OF PACKET FOLKS EXCHANGING IDEAS AND TIPS. LISTENED WITH GREAT INTEREST TO A FELLOW IN HAWAII EXPLAIN THE PROBLEMS OF LINKING THE ISLANDS TOGETHER...SPEAKING OF HF, A NUMBER IN THE STATE SHOW A GREAT INTEREST IN GETTING ON HF PACKET. SEEMS TO BE QUITE A BIT OF RACKET BEING MADE ON 14.103 AND 10.147 MHZ, AND WE DONT WANT TO BE LEFT OUT. SEE LAST MONTHS BEACON FOR GETTING SOME OUTBOARD 300 BPS MODEMS. WE HAVE HAD SUCCESS INTERFACING ONE AND PRINTING A NUMBER OF 20 METER BEACONS. HAVE HAD A FEW CONNECTIONS, ONLY TO FIND NO ONE ON THE KEYS. LOOKING FOR A SOURCE FOR A 20 PIN CONNECTOR THAT WILL MATE UP WITH THE TAPR KIT BOARD MODEM PLUG...[See the ADS Section. Ed.]

OSCAR PACKET ACTIVITY IS PICKING UP TOO. RAY, KK4S FROM SARASOTA, HAS HAD A FEW 1200 BPS TWO WAYS ON THE BIRD. RUNNING A FULL OSCAR SETUP, RAY IS SURPRISED ON HOW WELL THE FRAMES COME THRU, WITH SUCH LITTLE SIGNAL. KF4LG NOW HAS A BIRD ARRAY UP AND LOOKING FOR CONNECTS TOO. TUNING THE SIGNAL IN SEEMS TO BE A PROBLEM ON THE SATELLITE, AS IT ALSO IS ON HF. KK4S DECLARES SOME TYPE OF TUNING INDICATOR IS A NECESSITY!!!

BEFORE WE DISCONNECT FOR THE LAST TIME OF '84, IT'S FUN TO REFLECT BACK TO WHERE FADCA HAS COME FROM. IT DOESN'T SEEM THAT LONG AGO A NEW FELLOW HAM MOVED INTO THE AREA. THIS GENT WAS FANATICALLY RUNNING AROUND TRYING TO CONVINCE EVERYONE TO INVEST $200 INTO A NEW MODE OF COMMUNICATION, WHICH NOBODY HAD HEARD OF. KEEP IN MIND THIS FELLOW HAD JUST MOVED IN, AND MOST OF OLD TIMERS WONDERED WHERE HE WAS COMING FROM OR GOING TO! SOME HOW HE MANAGED TO SELL 5 OR SO ON THE IDEA. GUESS THERE IS SOMETHING TO ONE BEING BORN EVERY MINUTE. TIME PASSED VERY SLOWLY AS THOSE WHO COMMITTED TO THE PROJECT WAITING FOR THE HARDWARE TO ARRIVE. TO PUT IT IN A NUT SHELL, WE GOT SOMEONE NOBODY KNOWS, SELLING SOMETHING NOBODY HEARD OF, WAITING FOR WHO KNOWS WHAT TO ARRIVE. IF I DIDN'T KNOW ANY BETTER, I SAY THIS HAS GOT THE MAKINGS FOR A GOOD JOKE. BUT NO JOKE IT IS. THE HARWARE FINALLY ARRIVED, AND BEFORE LONG MOST OF US STARTED HEARING SOME STRANGE SOUNDING SIGNALS ON 2 METERS. FROM THAT BEGINNING, FADCA WAS BORN. THE FELLOW THAT SO MANY OF US WONDERED ABOUT, TURNED OUT TO BE ONE HECK OF A GUY AND A GOOD FRIEND. THANKS GWYN, W1BEL, FOR PUSHING SOMETHING THAT YOU BELIEVED IN!

NOT REALLY SURE WHEN WE WILL BE ABLE TO RECONNECT IN '85, AS A MOVE TO A NEW QTH IS POSSIBLE. BUT FOR NOW, THE FAMILY OF N4ZQ WISHES TO YOU AND YOURS, A HAPPY HOLIDAY SEASON, AND THE BEST IN 1985...

$49 KEITH...

PACKET RADIO DX RECORD CONTEST
By Ted Huf, K4NTA

Ok so you said that packet radio was just for computer hackers, well here is something for you DX types too. In fact who has not gotten a thrill out of working DX even on 2 meters? Well here it is, a packet radio DX contest. The rules are simple. All contacts must be above 144 Mhz. There is no limit on the number of digipeaters that can be used, but they must all be above 144 Mhz. This means no cross band to 20 meters. Satellite contacts do not count, nor repeats via satellites, or landlines. All contacts must be real time, no BBS messages or store and forward. Distance is to be measured air line between the two stations and not along the digipeater route. A valid contact will is the acknowledged exchange of name and QTH in the connected mode. The contest runs from midnight Dec 31, 1984 to midnight March 31, 1985. All entries must be received by me at 1829 N.W. Pinetree Way, Stuart, Fl. 33949 not later than April 15, 1985. Have fun and let me know your longest contact so we can keep everyone informed. Let's have fun with this.

The AEA AMTOR Mailbox
By Jim Diggs, K4AHO

Since May of 1984 I have been using a program from Advanced Electronics Applications called MBA-TOR. It now comes in cartridge form for both the Commodore Vic-20 and the C64. This program encompasses all forms of amateur digital communications except packet. It is capable of operating as a Morse code terminal as well as Baubot or ASCII terminal at all the popular speeds. It is also capable of operating as a full function AMTOR terminal with several special modes thrown in.

The mailbox mode is called AUTO-AMTOR. This mode will send a beacon at fixed intervals, and the beacon message is contained in a buffer. When a station responds to the beacon with his call and the change-over signal (+?) the mailbox responds with the contents of a second buffer. This buffer is used to make announcements, express areas of interest and give instructions as how to leave a message. When the second buffer is finished the change-over signal is sent. The calling station leaves his message and ends with the change-over signal. When the mailbox sees the second change-over signal the contents of a third buffer is sent as a sign-off message and then the mailbox goes to stand-by mode. These buffers can be saved to disk or tape and reloaded for use at another time. The message left by the calling station is printed as received if desired and is saved to the QSO buffer. The QSO buffer can be edited, saved to disk, or printed at a later time. Another mode called AUTOCALL-AMTOR is an extension of the mail-box feature. It operates as a mailbox except that at a set time it will call a particular station and automatically leave a message from a buffer. If the station does not respond the program will retry 3 times 30 minutes apart. If the station still does not respond the program if undisturbed will try again in 24 hour cycles until aborted. When this program is used in conjunction with a mailbox on the other end you have a truly auto-mated QSO!

My experiences using this mailbox program has had some unexpected suprises. Amtor stations use 14075 khz as a calling frequency so I thought that would be a natural place to start the mailbox. Boy, was I wrong. I got a number of messages from foreign stations that expressed interest in the mailbox mode but I got many messages from other users that felt I should not operate a mailbox on the calling frequency. Some complained I should not run a mailbox at all. I made friends with Bub, N6BEB who also was running a mailbox on the calling frequency. After so many complaints we elected to move down 1 khz. to 14074 khz., where we remain. There have been a number of other stations join us and the number of messages left are increasing every weekend I leave the mailbox on. Most of the messages are of the Hello, How are you variety, but some are in regards to program swaps that several stations and I have been working on. Also I keep in touch with several stations who share a interest in packet radio. The stations I have connected with seem to be more willing to use the Amtor mailbox than my packet mailbox even though I know more of the packet stations personally. Perhaps the packet users are more familiar with the BBS type of operation.

As far as AMTOR operation under less than desireable conditions. the ability of AMTOR to get thru is almost unbelievable. I use the AEA CP-1 TU, and have made contacts with Bub in California on 40 meters at 9:00 o'clock at night thru really bad QRM. Also I have made contacts thru bad SSB QRM on 10143 khz. in the evenings. It seems like if you can hear the other station you can get thru, although at reduced speed. I believe AMTOR would make a much better mode for meteor scatter than packet. You might think I prefer AMTOR over packet radio. For myself and an increasing number stations we find using both modes is the best solution. For VHF, hi-speed, computer linking packet excells, but on hf AMTOR stands head and shoulders above all other modes for error-free contacts. It can be used in an indirect mode (hex files) to transfer programs but it is slow. Amtor at best has an equivalent speed of aproximately 60 words a minute.

The Commodore 64 makes an excellent terminal for packet radio using an optimized terminal program like J-PAC and now can offer an inexpensive entry into AMTOR as well. I would recommend it to anyone interested in error-free digital communication.

From: Doug Drye, KD4NC

This is to inform you of the availability (once again) of the Challen Graphics Terminal printed circuit board. This board was made available several years ago through the hard work of some of the members of the Triad Amateur Computer Society in Greensboro, NC and distributed to many hobbyists around the country at a very low cost. We have, over the last year, been making some changes to the PC artwork. We did not tamper with the basic design, as it works very well. The quality of the PC board is excellent.

The CGT consists of the following hardware: 6502A (2MHz) CPU, 2k bytes of CPU RAM, up to 16k of EPROM, 6820 PIA (control/keyboard interface), 6850 ACIA and RS-232 interface, 16K video RAM, 6845 CRT controller.

The version 5.3 software provides the following features: 128 (5 x 7) character set, 25 lines of 80 characters (6 x 10 cell) or 32 lines of 80 characters (6 x 8 cell), 8 programmable cursors, 512 x 256 dot graphics display, Dot, vector, and rectangle fill plot modes, downloadable software capability, and lots more.

There are no especially exotic parts on the board except possibly the 20.8 MHz crystal which must be specially ordered. It shouldn't be too hard with a little searching to put one together for about $100 total parts cost.

A good faith effort will be put forth to promptly fill requests for boards, ROM patterns, documentation, answers to your questions, etc. But please, PLEASE, only through the mail. We will not answer questions over the phone! The ROM patterns and the wordy part of the documentation can be supplied in Intel HEX format on your diskette (a good one please) on 8" standard CP/M SSSD format, IBM PC single density, or on paper. We will also make an effort to place the CGT 5.3 firmware on your GOOD 2716s if you wish to send them to us. We will mail a copy of this letter and some documentation to anyone who writes to my P.O. box.

These boards are being supplied to us and to you near cost. This means that no one is making money on this deal!! We will distribute the boards through the mail or UPS at our cost plus a small amount to cover packaging, shipping, and the cost of documentation and mailings. There will be no money paid to the persons who spent many hours on the artwork. Since this is being done on a volunteer basis, there will be no warranties ex-pressed or otherwise.

Challen Graphics PC Board, shipping and documentation included: $60.00
CGT Rev 5.3 firmware in your GOOD 2716 EPROMS (4) or on your GOOD diskette: FREE with board
CGT Rev 5.3 firmware in our 2716s $20.00
CGT Rev 5.3 firmware and documentation on our diskette: $ 5.00
CGT address decoder prom programmed in our 82S123 only: $ 6.00

Send your request to:
CGT Group Buy % Doug Drye
P. O. Box 467341
Atlanta, GA 30346

Make money orders or checks payable to Dougles B. Drye. Certified checks or money orders will speed delivery. Please specify which items you wish. If you are purchasing media, specify CP/M or IBM-PC format.

FOURTH ARRL DIGITAL COMMUNICATIONS CONFERENCE
CALL FOR PAPERS

The American Radio Relay League will hold its Fourth Amateur Radio Computer Networking Conference on March 30, 1985 in San Francisco, CA. The conference will be in cooperation with the West Coast Computer Faire being held March 30 through April 2.

The deadline for receipt of camera-ready papers is March 1, 1985. All papers should be mailed to Marian S. Anderson, WB1FSB, ARRL, 225 Main St. Newington, CT 06111. If you plan to present a paper, please request an author's kit and identify the title of your paper immediately. Proceedings will be sold at the conference and by mail from ARRL Hq.

Technical papers are invited on all aspects of amateur packet radio and other forms of Amateur Radio digital communications via terrestrial, ionospheric, meteor-scatter and satellite media including AMSAT-OSCAR 10 and PACSAT. Topics may include network and system architecture, proposed standards, hardware, software, protocols, modulation and encoding schemes, applications, and practical experience.

For more information contact Paul L. Rinaldo, W4RI, ARRL, (203) 666-1541 weekdays, or write to the address above.

XEROX 820 MODIFICATIONS FOR USE WITH THE FAD
By Ted Huf, K4NTA

The Xerox 820 single board computer that so many of use or are getting for use as digipeaters requires some modification to use with the FAD Board and the digipeater code written by Howard Goldstein, N2WX. The main problem is that the firmware is on a 2764 Eprom and the 820 is set up for 2716's. The modification is not too difficult.

Remove the 2716's, U64 and U63. U63 is not used and must be removed. Install a 28 pin socket in the 24 pin socket of U64 in such a way that pins 14 & 15 of the 28 pin socket are plugged into pins 12 & 13 of the old 24 pin socket. This will leave pins 1,2,27 & 28 hanging out in space. Bend pin 23 of the 28 pin sockt so that it does not contact pin 21 of the old 24 pin socket. Connect pin 23 of the 28 pin socket to A11 (U35 pin 2). The pins left hanging out in space should be connected as follows: 2764 pin 1 to +5; 2764 pin 2 to A12 (U36 pin 5); 2764 pin 27 to +5 and 2764 pin 28 to +5.

Address decoding is done by removing U62 (74LS138) and installing a 16 pin socket. Bend pins 1,2 & 3 of the 74LS138 out so they do not plug into the new socket. Connect pin 1 of the 74LS138 to A13 (U35 pin 6) and pins 2 & 3 to ground.

If you are wire wrapping the FAD board from the June 1984 FADCA>BEACON there are a couple of changes from the article. Channel A is used instead of channel B as stated in the article. Change TxD to pin 15, RxD to pin 13, *DCD to pin 19, *CTS to pin 18 and *RTS to pin 18. It must be pointed out that the current version of the digipeater code uses channel A but future releases may not, so make provisions for changing this back to B if needed. Connect pin 4 of the 40 dip plug to pin 33 of the 8530*CE (chip enable).

Another change from the FADCA>BEACON article is the onboard crystal. Connect a microcomputer crystal across pins 29 (SyncB) and 28 (RtxcB) of the 8530 and connect pins 26 (RrxcB) to 12 (RtxcA).

TAPR now is selling the FAD Board as a bare board for $25.00 plus $2.50 shipping. Contact TAPR in Tucson for delivery.

BROWARD CHAPTER NEWS
by Tom Kneisel, K4GFG
1600 SW 115 Ave., Davie, Florida 33325

The big news of the month was the Broward Hamfest Dec 1-2. Phil, N4KBA set up a temporary digipeater a short distance from the Hamfest that enabled us to get into SOUTHNET from the hamfest site in Pompano. We still kept having some difficulties getting packets into K4GFG at the hamfest, and couldn't quite figure why. Sunday afternoon I overheard one of the hamfest committee members mention the strange CW they had been hearing all weekend on the committee's 2M working frequency. They had been using 145.000 all weekend!

We handed out about 125 sets of literature, and had 33 eople at the Packet Seminar. AEA, GLB, and TAPR boards were displayed or demonstrated, and 4 TAPR boards were sold. KA4EPS took his home and Saturday night assembled it in 4 hours! (It worked, too.) Is that a record? WA4FIB demonstrated a Macintosh program that ran the TNC in split-screen fashion, with the mouse taking care of connects, disconnects, and other features.

My thanks to all those who sent beacons our way during the weekend, and to Gwyn and the others for coming over to Broward to be with us. Thanks go to Gwyn's wife, who has sewn a very nice FADCA banner for use at hamfests.

Digipeater Update: W4FQM still targets the end of the year for the Hollywood digipeater. WA2HFA promiss a digipeater by IBM in Boca by mid 1985. Rumor has it that a digipeater by the Milgo group is about to appear in Cooper City. W4LDP, who dropped by the hamfest booth, discussed a 300 foot site on a Condo on the Ocean in Ft. Lauderdale. I am working on gear for that one, which could become THE Ft. Lauderdale digipeater!

4398 Phillips Place
Jacksonville, FL 32207
December 19, 1984

Dear FADCA:

Just a note to let you know that I've completed construction of the TAPR board and cabinet and am now operating packet here in Jacksonville. I have yet to attempt to digipeat outside the Jax area--have worked KB4B and WD4BIW only so far. However I'll be putting up a 89' tower by the end of the year and that should allow me to work Gainesville and (hopefully) Ocala.

I joined FADCA at the JAX Hamfest and have enjoyed reading the "Beacon." The last issue I received was the October one....Would you check your mailing list and see if I have received the subsequent issues.

I've been fairly active on OSCAR-10 (SSB only) and am interested in working packet once I've improved my signal strength with some better antennas. I know that packet transmissions require different baud rates and different tones. It would be appreciated if a future "BEACON" article would discuss the changes in the TAPR board required to operate via satellite as well as what different operating procedures (if any) are required.

Finally, I subscribed to "Microsystems" until that publication went out of business earlier this month. Yesterday I received a complementary issue of a magazine that is attempting to attract former "Microsystems" subscribers: "Micro Cornucopia." I had not heard of this publication before, but thought you might like to know about it since a number of packet people have Xerox 820 micros. "MicroC" describes itself as the "Single Board Systems Journal" and the issue I received contains several 820 articles. In fact, there is apparantely a monthly column which deals with the Xerox board. The magazine address is P. O. Box 223, Bend, OR 97709, telephone (503) 382-8048. The magazine is published six times a year, subscription rate is $16.00 per year.

I thought your presentation at Clearwater Hamfest went extremely well. Hopefully a few more people "joined the ranks" as a result of your efforts.

Happy Holidays,

Barry A. Baines, WD4ASW

Barry:

Thanks for the informative letter. As you see by the subtitle on this issue, there has been a delay in publication. Although this delayed publication puts FADCA in the distinguished company of TAPR and AMRAD, I am displeased to have to resort to combined/late issues of the newsletter. We are desperately seeking assistance from FADCA members in writing and preparing material for the newsletter. With continued support from the current contributors and a hoped for increase in assistance, we will get on and remain on schedule.

FADCA>BEACON

The FADCA>BEACON Is published monthly by the Florida Amateur Digital Communications Association (FADCA), 812 Childers Loop, Brandon, FL 33511. FADCA is a non-profit organization devoted to research, development, education, and public service. FADCA is governed by a board of directors and administered by officials appointed by the directors. The directors are:

Jim Diggs, K4AHO
Ted Huf, K4NTA
Tom Kneisel, K4GFG
Bill Sams, KF4LG
Dave Frey, K3AAX
Dick Klein, W4PCM
Gwyn Reedy, W1BEL
Bill Whitaker, WD4JKM

FADCA membership is open to anyone interested in supporting FADCA purposes. For introductory information about FADCA and packet radio please send a self addressed, stamped (37 cents) business size envelope to the FADCA address.To join, complete the membership application below and send with your dues payment to the FADCA address. Dues for calendar year 1985 are $12.00 and includes all issues of Vol. 2 of the FADCA>BEACON. Dues support newsletter publication and the printing of material for distribution at hamfests, computer and radio club meetings, and by mail. A financial statement covering 1984 will appear in the January

Send this completed form with your dues payment ($12.00) to:FADCA, 812 Childers Loop, Brandon, FL 33511.

NAME:_____CALLSIGN:_____ LICENSE CLASS:____

STREET ADDRESS:_____CITY AND STATE:_____ZIP:_____

TELEPHONE: (HOME):(____)____-_____ (WORK):(____)____-_____ ARE YOU ON: PACKET? AMTOR? RTTY?

TO WHAT OTHER AMATEUR ORGANIZATIONS DO YOU BELONG?_____

WHAT EQUIPMENT AND SOFTWARE DO YOU USE FOR DIGITAL COMMUNICATIONS?: PACKET TNC(S):_____

RTTY INTERFACE/TERMINAL UNIT(S):_____AMTOR:_____

RF GEAR:_____

COMPUTER(S)/TERMINAL(S):_____

DIGITAL INTERESTS (ELECTRONIC MAIL, BBS/MSO SYSTEMS, NETWORKING SOFTWARE, MODEM DESIGN, ...YOU NAME IT.):

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WHAT SKILL OR SERVICE CAN YOU OFFER IN SUPPORT OF FADCA?:_____

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COMMENTS/SUGGESTIONS/NAMES OF OTHER INTERESTED PERSONS:_____

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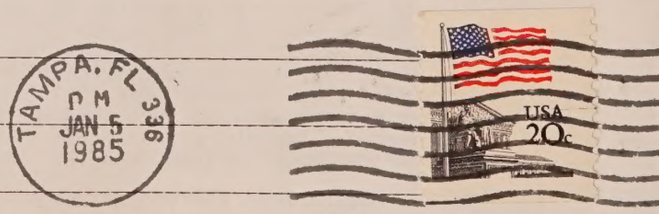

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